# THE MAC Flyer

February 1985

Unused Talent in the Cockpit...page 8

# THE MAC Flyer

For Greater Safety in MAC Air Operations

FEBRUARY 1985 | MACRP 127-5 | VOL XXXII NO. 2



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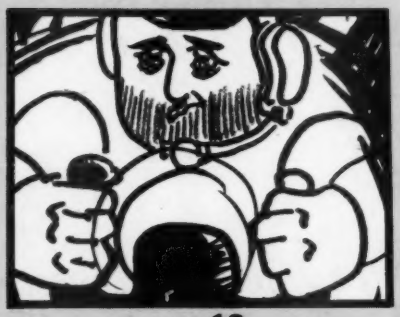

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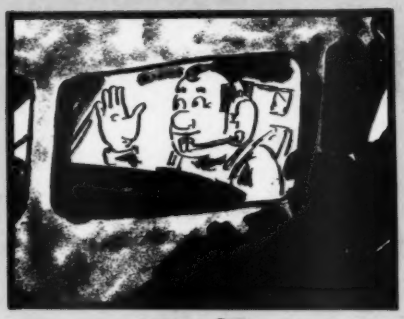

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*About The Cover: A 375th Aeromedical Airlift Wing C-9 stands ready to fly the "Triple 6" mission.*

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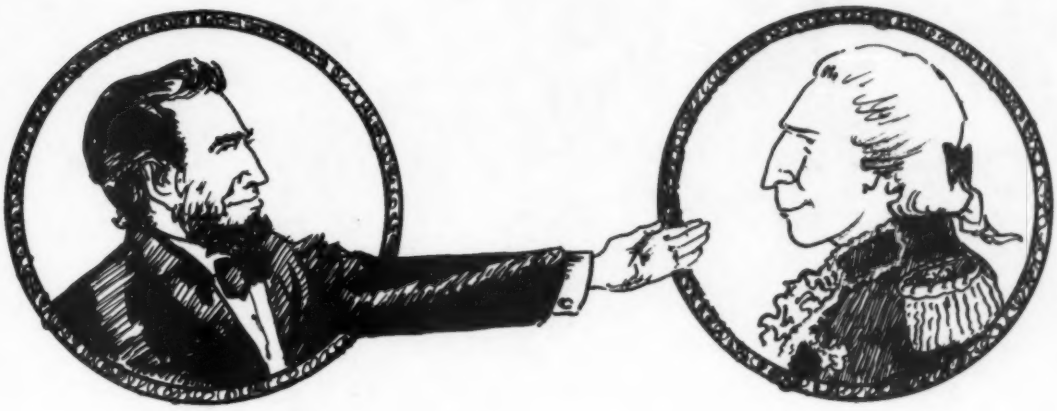
# An honest plea ..."Would we lie to you?"



Greetings, neighbor. My friend, George and I, have something we'd like to talk to you about. You see, we've been talking a lot recently about flying safety. Now, I know that's hard to believe, but it's true, and besides, this is *my* story. In fact, we've been talking about *you*. That's right! You—with the baggy green skin and the perpetual dark circles around your eyes from the long hours of flying the NAT tracks. We've also been talking about your friend who flies the "whisper-props," . In fact, old G.W. and I have been talking about everyone in your command. And do you know what our conclusion is? Well, we've decided that if your command is going to get safer, *you* have to take the lead. And you know George and I would never lie to you! But, you ask, how are you going to do it? That's the simple part.

All you have to do is write either a story or poem for the 1985 MAC Flying Safety Writing Contest. It can be fact or fiction, humorous or serious. Now what could be simpler? The only enemy you have is time. The contest ends precisely at midnight, March 31st, so you're going to have to hurry to make the deadline. Just follow the rules below and you'll be finished before you know it. After all, a personalized story about your own brush with a non-safe gremlin might just keep the other flier from making the same mistake—if he's alive to read about it, that is. It might even save his or her life. And, to tell the absolute truth, we'll all be losers if you don't enter the contest.

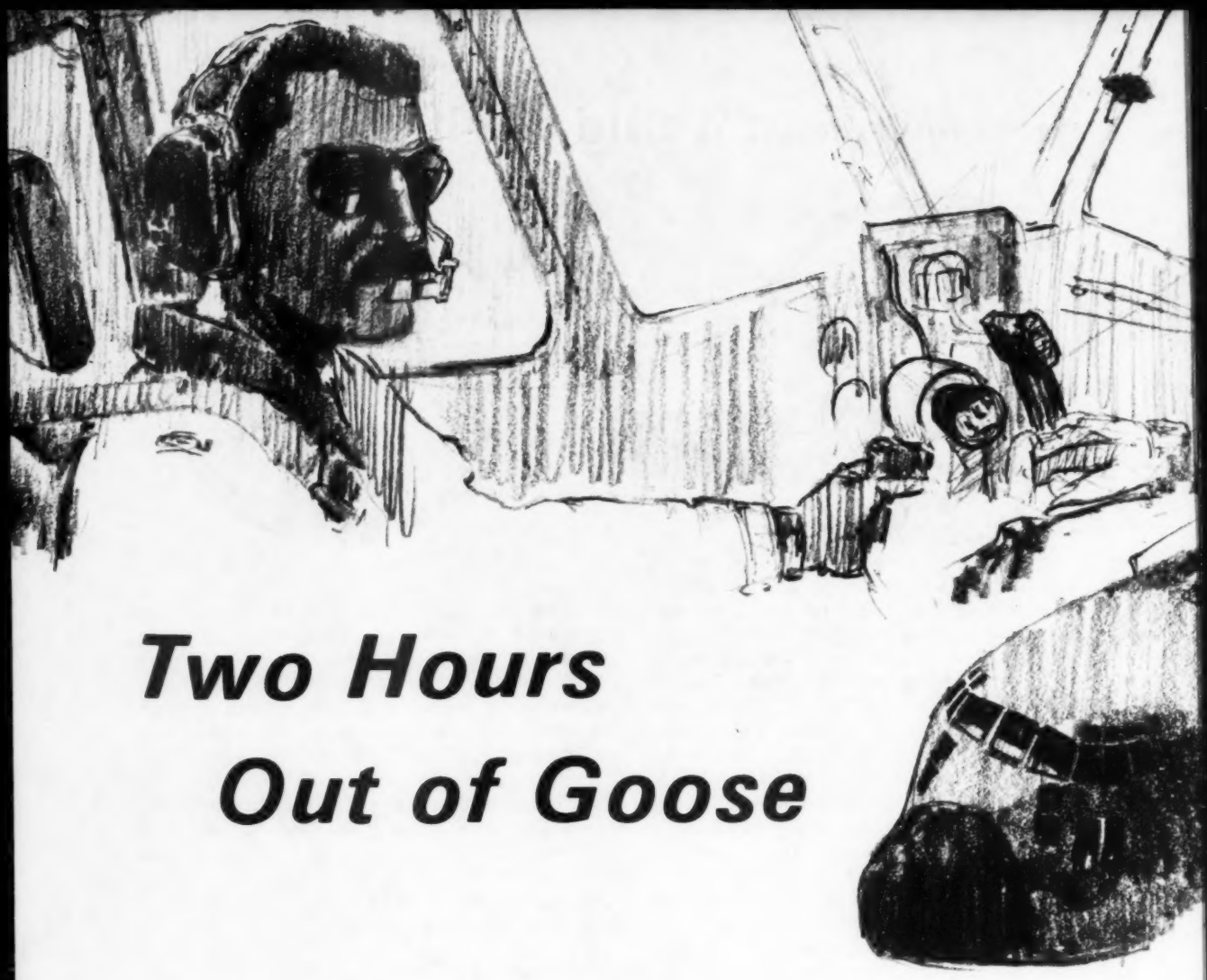
So, take it from two old-time safety experts and get started writing today. The sooner you enter, the sooner you, too, can start enjoying your free C.R. Terror T-shirt the editors give you just for entering. And that's one thing we'd never lie about!

## The Rules

**The 1985 MAC Flying Safety Writing Contest is conducted according to MACR 900-3 and these rules. All entries must be original, unpublished and postmarked no later than 31 March 1985. Stories must be between 1,000 and 3,000 words long (about 6 to 14 double-spaced typed pages); poetry should be about 75 to 100 lines. Entries must contain an *aviation safety/mishap prevention message.* Manuscripts must be double-space typed and submitted in two copies. Identify entries by title only and attach a cover sheet showing the author's name, address, duty phone number and unit. Also, the cover sheet should contain a brief autobiography.**

**The contest is open to anyone. Entries qualifying under the above rules earn their author a free C.R. Terror T-shirt (so indicate your size) and a free 1-year subscription to *The MAC Flyer*. However, contest prizes (desk sets and plaques) may only be awarded to military members and civilian employees of the Department of the Air Force or Air Reserve Forces. Other entrants may be selected for Honorable Mention in a Special Category. All winning stories will be published in *The MAC Flyer*. Entries should be addressed to:**

**Safety Writing Contest**
**HQ MAC/IGFE**
**Scott AFB, IL 62225-5101**

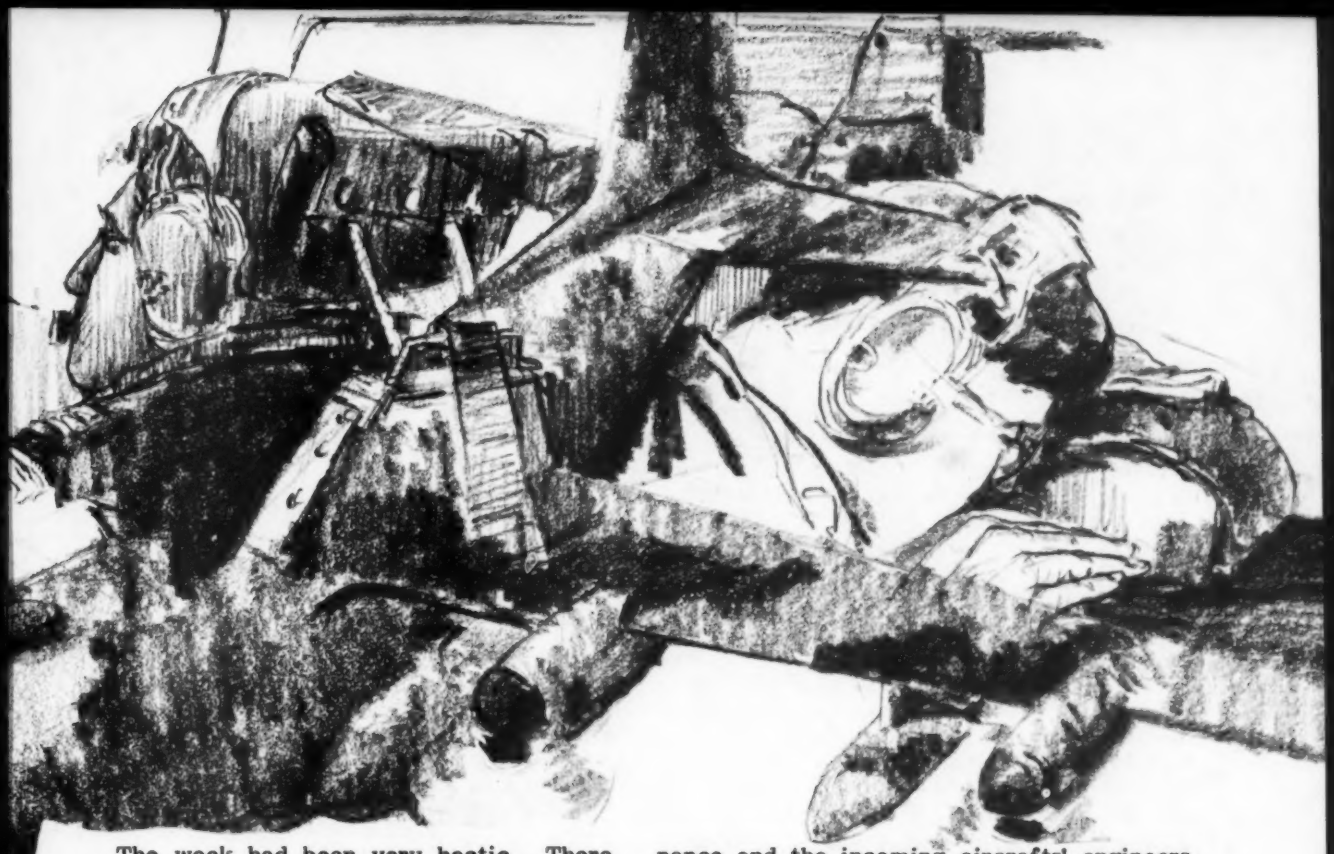


# Two Hours Out of Goose

by Capt. Anthony R. Watzke
50th TAS
Little Rock AFB, Arkansas

As the last aircraft finally departed Goose Bay, Labrador, for the long trip over the pond to RAF Mildenhall, UK, I finally had time to pause and reflect on the previous week's work as the Enroute Support Team Alpha (ESTA) Commander. Somehow, we had been selected for the night shift for launching and recovering aircraft for our squadron's rotation to Europe. Now with two hours left until we could depart, I began to recall all the things that had happened during our tour.

Honorable Mention Winner, 1984 MAC Flying Safety Writing Contest



The week had been very hectic. There had been the Herk that arrived with gear problems requiring me to coordinate for a spare to be flown in from home station. As it turned out, the crew bringing the spare had to fly the repaired aircraft back home, gear down. Then there was the aircraft that arrived with some fuel gauges inop, which mandated we get a waiver from 21st to fly the aircraft, either back home or across the pond. So, across the pond he went. Our own aircraft had developed a fuel seep while sitting in the hangar and therefore couldn't be used as a spare. There was the aircraft with a bad radar. Since we had no spare parts, we canned one off the "spare." All these problems, coupled with being "mother" for the boys during their stage through Goose, had taken their toll. All things considered, though, it could have been worse.

The crew worked well together. Each member had his own duties to perform. Capt. Hank Johnson, the copilot, was responsible for getting rooms for the crews checking in and collecting keys from those leaving. SSgt. Ted Murphy, the engineer, had been working closely with the ESTA maintenance and the incoming aircrafts' engineers on aircraft problems. Sgt. Lester Jones, the loadmaster, operated the forklift and changed loads as necessary. 1st Lt. Tom Berry, the navigator, worked closely with each crew's navigator planning for the route across the pond so the crews would have as few problems as possible.

During my efforts to resolve these final problems, the maintenance team had pulled ol' 78 out of the hangar and prepared her for the trip. Since the rest of the crew was busy returning our borrowed equipment to the rightful owners, I climbed aboard the aircraft and sat down in the seat. I continued contemplating the previous weeks' events and this, our last day.

Today started particularly early as we had to prepare to leave and insure all our people and equipment were ready. Murphy exceeded himself this particular day. Each aircraft arrived in a little worse shape than its predecessor. We had to once again give up our aircraft as a spare. This required using part of the maintenance team to fix up ol' 78, which would now be our aircraft for the trip. We managed to overcome all the problems

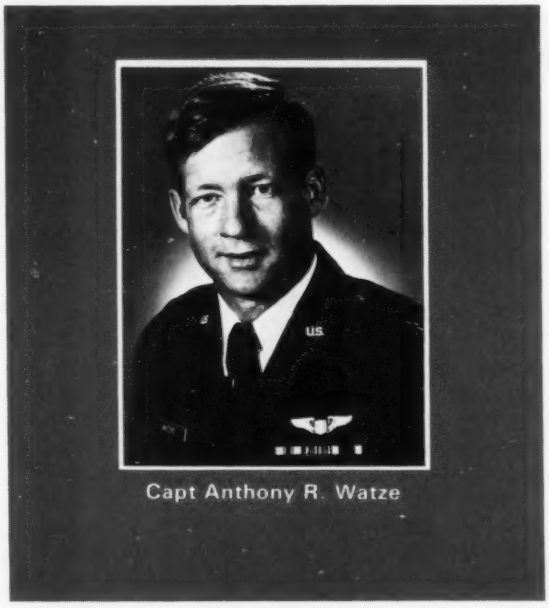
**I knew we were in trouble when he tried to fly with his head held at an angle ...**

and I knew we'd get well-deserved congratulations from the boss when we arrived at destination. Our collective "fun meters" had been pegged for the last two days, and I knew we were all ready to continue our rote somewhere besides Labrador.

We took off, loaded to the hilt with maintenance pax and cargo. The climb to altitude was a bit unnerving as the northern lights, which had been so beautiful all week when viewed from the ground, played havoc with my spatial orientation. The problem of vertigo, coupled with my fatigue, really made the old thumper race. I finally turned the aircraft over to Captain Johnson, the copilot. I knew we were in trouble when he tried to fly with his head held at an angle as if he was trying to let water run out of his ear. Between the two of us, we finally managed to keep the aircraft straight. We leveled off to wait for enough fuel to burn off so we could climb to enroute altitude. I asked everyone to keep an eye on one another and stay awake. I was sure everyone was exhausted. We were on the borderline for crew duty day, but the members of this crew were mission hackers and willing to finish the trip. The steady droning of the Herk's four Allison engines was like a lullaby and took its toll on me. What I didn't know was that the effects were the same on everyone. I glanced at my watch. It was 0100Z—only an hour had passed since takeoff. But our duties had officially started at 1400Z, we had been awake several hours prior to that, and all this was making for a really long day. I decided to make a short check of the inside of my eyelids for cracks, but only for a moment.

I opened my eyes and looked around the cockpit. Captain Johnson was tilted back in the other pilot seat and Sergeant Murphy was hanging limply against his engineer's seat straps, still clutching his fuel log. Lieutenant Berry, our navigator, had his head curled in the nook of his arm, and the loadmaster, Sergeant Jones, didn't answer my intercom page. For that matter, no one budged as I continuously called on the intercom for each member. I checked my watch—0145Z—I had been out for 45 minutes! After several tries on different frequencies, I finally reestablished contact with Moncton Center. I advised them we wanted to return to Goose. I managed to wake the engineer, who woke everyone else. We returned to Goose uneventfully, but I had to make the decision that no true airlifter ever wants to make—abort the mission. We would be the brunt of a few jokes for a time at Mildenhall, but I knew we could handle them. The safety of my crew and passengers was foremost and I made the right decision, one that I probably should have made before we departed Goose.

I awoke with a start as Sergeant Murphy tapped me on the shoulder to say that all was in order and we were ready to go. My dream had been so real! I was sweating, even though the outside temperature was two degrees Celsius. I called the crew together and told them that we were going to stay an extra day at Goose; I thought I caught a slight hint of relief in everyone's eyes. But they all looked at me a little strangely when I told them my decision had been made earlier when we were two hours out of goose.



Capt Anthony R. Watze

# Excellence In Airmanship

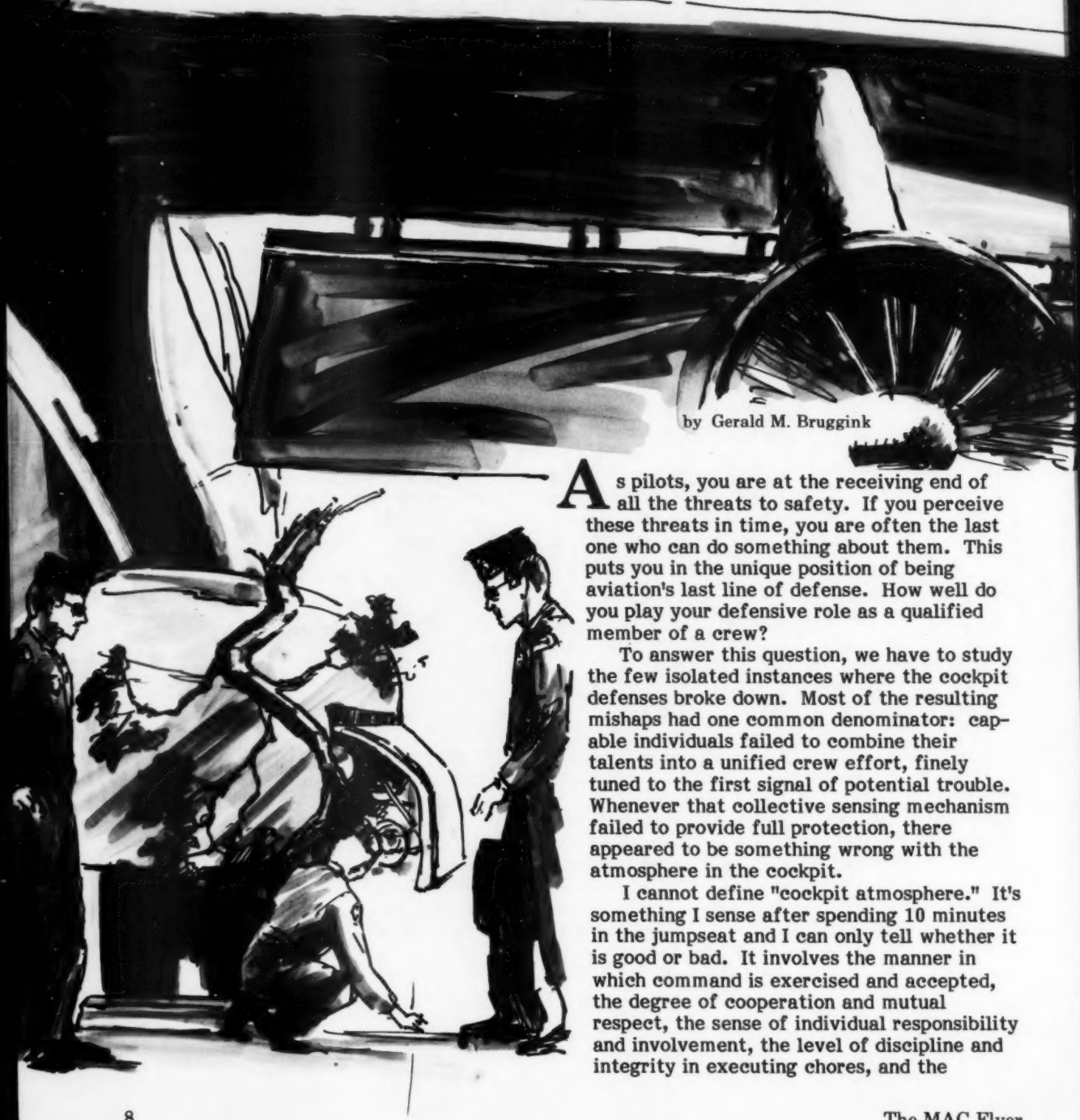
**Capt. James Parks and his crew** were involved in the rescue of Korean civilians from a flooded residential neighborhood of Seoul on 2 September, 1984. Flying an HH-3E, the crew had already saved 14 stranded civilians from the rapidly rising waters of the Han River, and were in the process of hoisting still more from the rooftops. With eight civilians on board and another five waiting to be hoisted up, the number-one engine of the HH-3 failed. Immediately, the Jolly Green began to settle. Sgt. Jeffery Lewis, the flight engineer who was also preparing to hoist three more survivors aboard, motioned to the pararescuemen, TSgt. Arthur Morrison and SSgt. Mark Fowler, to move away from the helicopter. The PJs quickly realized what was happening and immediately ensured the waiting civilians on the roof were lying down. Captain Parks then maneuvered the aircraft to the left and away from the PJs and the flood victims, and successfully landed the crippled Jolly Green on portions of three roof tops. But the emergency wasn't over yet.

Almost immediately upon touchdown, the number-one engine fire light came on. Sergeant Lewis and the copilot, 2nd Lt. Peter Sullivan, quickly shut down the remaining engine, and Sergeants Morrison, Fowler, and Lewis evacuated the eight Koreans, while simultaneously fighting the fire with hand-held fire extinguishers. This action was critical since one of the Jolly Green's fuel tanks had ruptured on impact, and jet fuel had by now spread to the surrounding buildings and flood waters. The fire was quickly extinguished, successfully limiting the damage to both the aircraft and the buildings.

The superior airmanship of Captain Parks, Lieutenant Sullivan and Sergeant Lewis, coupled with the cool, quick reactions of Sergeants Morrison and Fowler, undoubtedly saved the lives of 16 persons and kept aircraft damage to an absolute minimum. They are truly worthy of the Excellence in Airmanship award!

We all lose when there's ...

# Unused Talent in the Cockpit



by Gerald M. Bruggink

As pilots, you are at the receiving end of all the threats to safety. If you perceive these threats in time, you are often the last one who can do something about them. This puts you in the unique position of being aviation's last line of defense. How well do you play your defensive role as a qualified member of a crew?

To answer this question, we have to study the few isolated instances where the cockpit defenses broke down. Most of the resulting mishaps had one common denominator: capable individuals failed to combine their talents into a unified crew effort, finely tuned to the first signal of potential trouble. Whenever that collective sensing mechanism failed to provide full protection, there appeared to be something wrong with the atmosphere in the cockpit.

I cannot define "cockpit atmosphere." It's something I sense after spending 10 minutes in the jumpseat and I can only tell whether it is good or bad. It involves the manner in which command is exercised and accepted, the degree of cooperation and mutual respect, the sense of individual responsibility and involvement, the level of discipline and integrity in executing chores, and the

collective reaction to delays and other frustrations. In short, I judge cockpit atmosphere by how it affects me. Either I feel comfortable because I sense that I'm on a well-run ship, or I feel uncomfortable because I have the impression that the individual crewmembers just happen to be traveling to the same destination, in the same cockpit.

Although it's difficult to define a cockpit atmosphere that brings out the best in each crewmember when it counts the most, it's easy to demonstrate how failure to use available talent can lead to accidents.

**Case No. 1**

You are the junior crewmember in the cockpit, with less than 2,000 hours. The two pilots up front are making a localizer back course approach. As the flight passes the final approach fix, the tower advises a snow storm is moving across the approach end of the runway. About the same time, the aircraft enters the snow. The first officer calls out 1,000 and 600 feet above touchdown. You feel confident that the aircraft will be leveled off at the MDA of 360 feet if the runway is not in sight, but the descent continues through MDA without a callout and you notice that both pilots are looking outside. The altimeters, including the radio altimeter, are approaching zero height above touchdown. The aircraft should be over the runway now and you are waiting for the familiar thud of the landing gear. Suddenly you hear excited talk about trees and you realize that the two up front have bungled the job. There is a loud roar of engines followed by a sharp change in aircraft attitude. For a few seconds you feel the chilling uncertainty about what is going to come next, until the instruments tell you that all is well. The crew makes a go-around and lands successfully on the second attempt.

Later, when you learn the aircraft struck trees 15 feet above airport elevation and 1¼ miles short of the runway, you begin to wonder about *your* role in this brush with disaster. Would things have been different had you called out MDA and subsequent altitudes? Would the captain have appreciated the unsolicited help or would it have annoyed him? What was it that kept you from speaking up when the altitudes unwound and you saw no runway? Was it your misplaced confidence in the airmanship of your colleagues up front, or was it an underdeveloped instinct for self-preservation?

The need to ask these questions proves you weren't a working part of the cockpit team. Somehow, your talent was wasted. The failsafe features of the crew concept did not operate.

After the dust settled, you were confronted with another dilemma—loyalty to your profession or belated loyalty to your colleagues. How did you feel when you claimed, with the rest of the crew, you didn't know the MDA callout was a required procedure? Even if it had not been a requirement through some incredible oversight, the logic for it is so overwhelming that your denial makes one wonder whether you grasp your responsibilities in the cockpit.

Nevertheless, I hope this sobering experience taught you one thing. True loyalty means speaking up at the first suspicion of trouble or compromise. There is no room in the cockpit for servility. Pretending all is well, or going to be well, may be the most fashionable killer in aviation.

**Case No. 2**

The two pilots have flown the 30-minute trip hundreds of times. There is hardly a need to get out the approach plate or tune in the NDB. Why check the two intersections on the VOR radial, 20 and 10 miles from the destination airport when approach control will give them radar vectors and line them up with the ILS runway? The flight is operating in IMC conditions; the aircraft isn't equipped with DME.

When the controller tells them they are approaching the second intersection, they have no reason to question his statement and they accept the familiar vectors for the ILS. Actually, the controller saw them approach the first intersection, but he identified it as the second one. Shortly thereafter, the controller loses the aircraft's primary radar return in rain. He gives the flight an identification turn that leads it straight into a mountainside.

What went wrong? There was an obvious ATC error. For the purpose of this summary, let's say the controller was operating well beyond his stress tolerance and without proper supervision. The stresses that affected his performance were chronic and outside of his personal control. He should not have been controlling traffic in the first place.

However, as important as the formal cause determination of this accident is the question: What could the crew have done to prevent this accident, despite a breakdown in the ATC system? This question is not only reasonable, it recognizes the pilot's unique role in the aviation system.

It appears this crew missed two opportunities to prevent the accident by questioning ATC's handling of their flight: (1) The controller told them they were approaching the second intersection six minutes before their own ETA for that intersection and (2) if they had taken the trouble to crosscheck their position using the NDB, they would have discovered the controller's error.

I don't mean to introduce, with hindsight, the element of crew error in this accident. An airspace system cannot operate without mutual trust between pilots and controllers; however, this interdependence does not mean that you forego the opportunity to keep track of your own whereabouts when you know you're being vectored below the obstruction height of nearby terrain. In such a case, you show blind faith in the man at the other end who is also entitled to his good and bad moments, just as you are. You must cultivate your protective skepticism if you want more immunity against chance and the human variable.

Here are some abbreviated examples of underutilization of cockpit talent.

- The flight crew had a combined experience of 89,000 hours. There was no reason to expect that they would attempt a takeoff with the airspeed bugs set at values that didn't correspond with the flap setting. Yet, they did when they had to use a runway that was shorter than the one for which they had planned. They increased the flap setting, as required, but forgot to lower the bugspeeds. The aircraft struck obstacles after it was rotated at the very end of the runway.
- During the pre-takeoff check, the crew didn't activate the pitot head heaters although procedures required it. The pitot heads became blocked by ice on the climb through known icing conditions. The crew reacted to the high airspeed indications by increasing the pitch attitude, until they lost complete control of the aircraft. It appears the crew attributed the unusual instrument readings to strong updrafts, without suspecting the likelihood of airspeed system icing and without reverting to attitude flying. Do we need another warning light in the cockpit-if there is room-or more emphasis on the development and utilization of cockpit talent?

Remember the parable of the five talents? Well, if you don't want to be buried with your talent, you have to use it. In order to recognize opportunities that others have missed, study accident reports with the thought: How could I have prevented that accident under similar circumstances? In the long run, this attitude will do more for your profession and the economics of air travel than preoccupation with factors that might exonerate an accident-involved colleague. To stay away from places where there is weeping and a tearing of metal, you have to put your talent to work and stand up for yourself and your crew.

Reprinted from *Flight Crew Magazine*

# TMF Instrument Quiz

You and your crew have been ordered to divert to Yakima, Washington, to pick up a load of apples. Assume you are authorized to land at Yakima Air Terminal and that your aircraft's navigational equipment is functioning properly. The time is 2200 local.

As you approach Yakima from the west, you're instructed to proceed to CHINS, then cleared for the LOC/DME BC-B approach, to descend and maintain 6,600 feet when passing CHINS.

1. Your newly-minted copilot immediately takes exception to the clearance. "Pilot, how can we descend to 6,600 feet when the MSA in our area is 8,000 feet?"

What is your response to your concerned second-in-command?

a. "Copilot, confirm our clearance with approach."

b. "It's OK. We're in radar contact."

c. "Once we pass CHINS we're on a segment of the published routing, and we're legal to descend to 6,600 feet."

d. "Your job is to lower the gear and talk on the radios. I'll take care of the flying. Now button your beak and clear right!"

e. a and c.

f. b and d.

g. All of the above.

2. Proceeding inbound on the YKM 284° radial, you prepare to intercept the YKM 16 DME arc. When may you descend to 5,400 feet?

a. When established on the YKM 16 DME arc.

b. When passing the YKM 271° radial.

c. When beginning your turn to intercept the YKM 16 DME arc.

3. What does "LR-271°" mean? "Lead radial," you say? Correct. Now, how much lead does it provide (fixed wing) to assist in intercepting the intermediate/final course?

a. 2°.

b. 1 nm (minimum).

c. 12°

d. 2 nm (minimum).

4. DME is required to fly this approach.

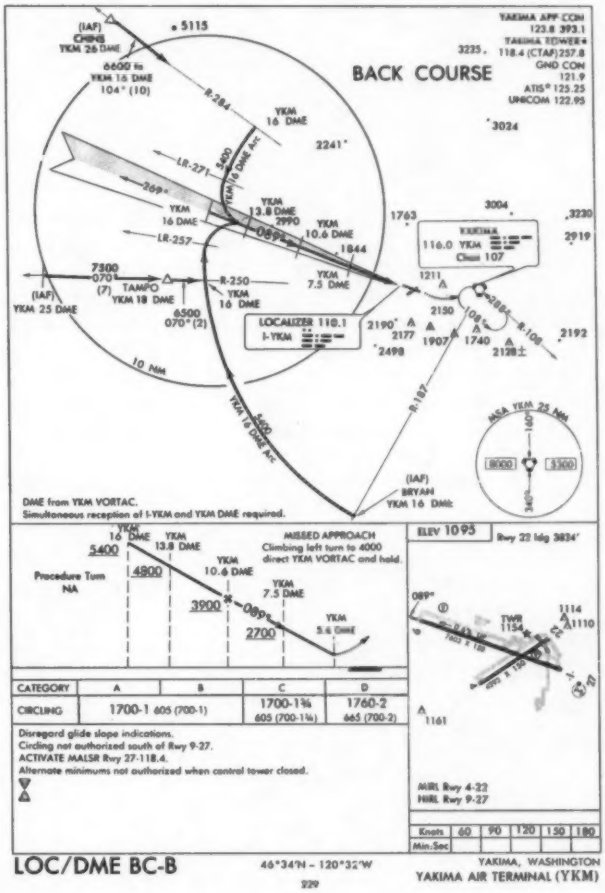
a. True.

b. False.

5. You reach your lead point to intercept the localizer and begin your turn inbound. You may now descend to 4,800 feet.

a. True.

b. False.



6. What course should you have selected in the course selector window in order to fly the final approach?

a. 089°.
b. 269°.
c. None of the above.

7. Passing the final approach fix, you suddenly notice the glide slope indicator is full scale high. You should _____.

a. Level off until reintercepting the glide slope.
b. Immediately go missed approach.
c. Disregard the glide slope indication.

8. Your aircraft is "Category C." What ceiling/visibility do you need to fly this approach?

a. 700 feet/1 3/4 nm.
b. 1,700 feet/1 3/4 sm.
c. 1,700 feet/1 3/4 nm.
d. 700 feet/1 3/4 sm.

9. The tower is closed for the night and the surface wind requires circling to land on runway 27. Having carefully studied the approach plate, you realize the MALSR (medium intensity approach light system with runway alignment indicator lights) must be activated by using the VHF comm radio. Unfortunately, your copilot has a blank look on his face—a look that says, "Now what do I do?" You tell him to read the information on radio control airport lighting systems found in _____.

a. The Flight Information Handbook.
b. AFM 51-37, Chapter 6.
c. Your aircraft's Dash-1, in the Chapter on instrument procedures.
d. Page III of the FLIP low altitude instrument approach book.

10. For a 10-point bonus, what is the significance of the "B" in LOC/DME BC-B?

a. There is a LOC/DME BC-A on another approach plate. The "A" and "B" simply differentiate between the two approaches.
b. The "B" tells the pilot to set the published back course in the course select window before beginning the approach.
c. The approach is designed to terminate with a circling approach.

## The Answers

1. c. Obviously, since there is doubt over the validity of the clearance, it should be immediately verified with the controlling agency. However, AFM 51-37, para 6-3f, says it's legal to descend since you're established on a segment of the published routing or instrument approach procedure.

2. a. AFM 51-37, para 6-13d (1), states except for descents at an IAF, you must be established on the appropriate segment of the procedural track before descent to the next altitude shown on the approach plate.

3. d. Refer to the General Information and Abbreviations section on page III of the FLIP low altitude instrument approach book.

4. a. The note at the bottom left corner of the approach planview states simultaneous reception of both the localizer (I-YKM) and YKM DME is required to fly the approach. Also remember some approaches may require TACAN/VOR associated DME on the initial segment and a different ILS associated DME for the final approach (See AFM 51-37, para 1-30e).

5. b. Take another look at the reference given for question 2.

6. b. AFM 51-37, para 6-16a (1)(b), states that for a back course localizer approach, you should set the published front course in the course selector window.

7. c. The note in the lower left-hand corner of the approach plate instructs aircrews to disregard glide slope indications.

8. d. Remember, prevailing visibility is expressed in statute miles, except in certain areas of the world where meters are the common measure. The minima block will indicate that unit with a small *m*.

9. d. You get credit if you answered b or d. If you haven't done very well to this point, add one point to your score if you answered b. At least you know AFM 51-37 discusses airport lighting.

10. c. When the name of an approach is followed by a letter such as A, B, C, etc., the approach is designed for circling minimums only. Other examples could be TACAN-A, NDB-C, etc. (AFM 51-37, para 3-4a (3) (c).)

# Hedge Hopping the Plains

## Aeromedical Airlift spells efficiency in comfort.

by Captain Thomas J. Whitmire
Associate Editor

As MAC missions go, the aeromedical evacuation mission has to go down as one of the more challenging and rewarding ones around. Anytime crews from two separate squadrons (the flight crews and medical crews are separated) can function as an effective team and maintain the safety record these folks have, they must be doing something right.

Last November I had the chance to jump a 375th Aeromedical Airlift Wing C-9 mission to try and learn what makes the system work. The mission I picked was Aeromedical Flight 666, which meant nothing to me until I did some checking. I found the first and last digits stood for Scott AFB, where we started and finished. The middle six was for "region 6" of the US. This was where we'd be flying during the day; basically the midwest.

**Predeparture**

The day started on a familiar note with a 0630 briefing from the aircraft commander. He covered such items as weather, tail number, parking spot and itinerary. The weather looked like no factor and we were to fly aircraft 88932 parked on spot 10. The day would be busy with stops at Whiteman AFB, Missouri; Glenview NAS, Illinois; Wright-Patterson AFB, Ohio; down to Memphis International Airport, Tennessee; Blytheville AFB, Arkansas; and returning to Scott. The "triple 6" mission usually runs a little longer, but the patient load was light this time. The longest leg would last only about an hour with 30 minute ground times at each stop.

The aircraft commander for "triple 6" was Col. Charles Thomas, the Vice Wing Commander of the 375th, and flying as copilot for the day's mission was Capt. Benny Rich, the wing C-9 flight safety officer. The flight mechanic was A1C James Hamilton. I figured I was in good hands.

The medical crew consisted of three flight nurses: Capts. Elizabeth Buck and James Milhollen, and 2nd Lt. Carol Duis, the medical crew director (MCD) for the day's activities. Assisting the nurses were three medical technicians: SSgts. Katherine Brehm and Harold Krohne, and Sgt. Sharon Malaske.

**Above:** *Staff Sergeant Brehm, 57th Aeromedical Evacuation Squadron, offers refreshment and conversation to Mr. James Westbrook enroute to Wright-Patterson AFB, OH.*

After the briefing, the flight crew and medical technicians went to prepare the aircraft, while the flight nurses went to the Aeromedical Staging Facility (ASF) to process patients for the flight. Once inside the ASF, the nurses checked patient medical records to ensure accountability. Next they received a brief history on each patient, emphasizing any special requirements. Departing Scott we would be carrying one litter patient and 11 ambulatory patients.

The patients would be transported to the waiting aircraft aboard a specially equipped Ambus. It's designed to meet a variety of patient needs such as oxygen, suction, I.V.s and so forth.

It was 0720 as we departed the ASF

*Photos by Captain Thomas J. Whitmire*

headed for the flightline. We had an hour and ten minutes before scheduled take-off time and everything was running like clockwork.

As we approached parking spot 10, aircraft 932 was a veritable beehive of activity. Captain Rich immediately came out to inform the MCD that the auxiliary power unit (APU) was suffering from a sick fuel pump, but would be repaired soon, hopefully. In any event, a spare Nightingale was "locked and cocked" should we need to change aircraft. The mission would go, on 932 or the spare, but go nevertheless. Although the maintenance folks worked feverishly to make repairs, as time passed it looked like a decision was needed to either fly 932 without an APU, or begin a time consuming aircraft swap. Colonel Thomas elected to "press on" without the APU and at 0844, 932 raised the "pointy end" skyward with an impressive climb attitude, leaving a patchwork of newly harvested cornfields in its wake.

**Gear Up**

The C-9 is quite a machine. It's quiet, fast and very comfortable. The term "cadillac" was touted by several of the crew members as they described the "9," and I have to agree. The primary goal, of course, is to make the patients as comfortable as possible while enroute and the Nightingale does this very well. We even had music piped into the cabin during ground operations. Impressive.

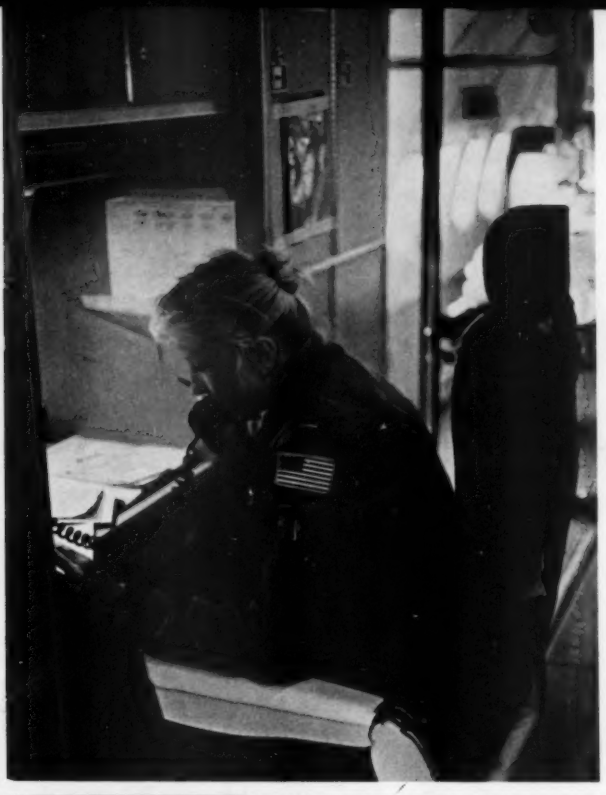
**Above:** *Colonel Thomas, 375 Aeromedical Airlift Wing Vice Commander, heads for a maintenance debriefing following a successful mission.*

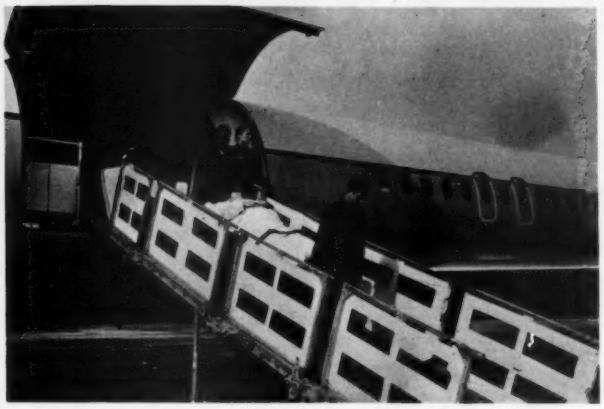
**Above right:** *Lieutenant Duis, 73d Aeromedical Evacuation Squadron, medical crew director for the "Triple 6" mission.*

While enroute, the pilots did the standard "pilot things," but they did them in rapid fashion because of the short enroute and ground times. The flight mechanic performed duties which included checking aircraft weight and balance, preflighting and enroute refueling as needed. Had 932 needed repairs at an out-base, Airman Hamilton would have worked with the maintenance specialists to get it fixed. Oh, one other thing. While enroute, the flight mechanic also contacts dispatch or command post with the load message. This frees the copilot to devote full attention to backing up the pilot and working with ATC. I liked that.

**The Medical Crew**

I was really interested in learning how the folks in the back end worked, so I spent a lot of time talking to them. The medical crews are trained to deal with both medical and aircraft emergencies. The flight nurses and medical technicians are already well trained to deal with medical emergencies before they ever enter the flight program. Once selected, they receive six weeks of training at the School of Aerospace Medicine located at Brooks AFB, Texas. While there, they receive





**Above:** *At each stop, a locally assigned medical team meets the Nightingale to offload the patients.*

training in the airevac mission, flight physiology, and survival (land and water).

Since one of the most time-critical emergencies that can happen to a patient is a cardiac arrest, the flight nurse's checklist devotes 15 pages to dealing with this malady. The C-9 carries all the standard equipment found in any "TV show" emergency room for reviving the stricken patient.

Additionally, the medical crew receives training to cope with aircraft emergencies including fuselage fire, rapid decompression, emergency descent, crash landing, and ditching. They take flight evaluations twice a year and written examinations once a year to ensure their skills remain honed.

At each stop throughout the day, we were met by a base medical team and an "army" of fire trucks. While the technicians assisted in deplaning and enplaning patients, the nurses checked medical records and received patient briefings just as they had done at the Scott ASF earlier in the day.

All in all, the "triple 6" went very well with no major surprises and we returned to Scott about 1545, ahead of the original schedule. As we pulled into spot 10 to put 932 to bed, we once again were met by the blue bus and fire-truck "army."

Lieutenant Duis accompanied the patients picked up during the day to the ASF for in-processing. The rest of the crew boarded the familiar crew bus for the trek back to the squadrons.

**Safety**

Before, I mentioned the commendable safety record maintained by the C-9s here at Scott. Specifically, the 11th Aeromedical Airlift Squadron has flown 13 consecutive years and 240,000 hours without a Class A or B mishap. That's an outstanding record, and a key to this enviable safety record is the way in which the crew works together as a whole. The flight crew seems to have an indepth understanding of the needs and responsibilities of the folks in the back. The pilots don't just close the cockpit door and fly. Patient needs are considered in every decision they make. This harmonious relationship was quite apparent on board "triple 6" and has been a strong contributor to their safety success. The C-9 is clearly a proven performer and this has undoubtedly contributed to its commendable record. However, even the best designed airframe cannot function properly without dedicated maintainers and a supply of spare parts to keep it flying. These immaculate aircraft attest to the skill and pride of those flying and maintaining them.

Oh, one more thing. During the flight, I met an elderly lady from Little Rock who had flown the C-9 "system" many times. She absolutely insisted that I tell our readers of the outstanding job these folks do for their patients. Done!

# CRAF Our Partners in Airlif

Transamerica Airlines

NATIONAL AIRLINES

UNITED AIRLINES

EVERGREEN

Over the last few months, *The MAC Flyer* has paid tribute to many of the airlines and aircraft which support the Civil Reserve Air Fleet (CRAF). Each has made major contributions to the program. This month we spotlight the McDonnell-Douglas DC-8.

The CRAF program was just over six years old when McDonnell-Douglas rolled out the DC-8, the first McDonnell-Douglas aircraft to have jet engines. Very quickly, the DC-8 began to establish new standards of excellence as it set world records for speed, payload and range. In fact, during a dive test it became the first commercial transport of any kind to break the sound barrier.

Originally designed to incorporate the qualities of advanced aerodynamic design and turbofan power, the DC-8 was built to carry both cargo and passengers. Various models of the DC-8 are capable of carrying up to 18 cargo pallets or 251 passengers.

Intended to have a life of up to 125,000

## lift

flight hours, the DC-8 airframe continues to deliver airworthy performance. Because of lower investment costs, many carriers are now electing to reengine rather than replace DC-8s to comply with the new FAR Part 36 noise level reduction requirements.

Equipped with quieter, more fuel efficient and more powerful CFM 56 engines, these new DC-8s are designated series 70 aircraft and are capable of cruising at altitudes up to 39,000 feet. The new engines also permit increased takeoff weights under "hot" day conditions.

A proven performer, the re-engined DC-8 continues to support the CRAF and the military airlift system through peacetime contract airlift of DOD forces and equipment.

| DC-8-73CF | |
|---|---|
| Max Ramp Weight | 358,000 |
| Max Takeoff Weight | 355,000 |
| Max Landing Weight | 275,000 |
| Max Zero Fuel Weight | 261,000 |
| Fuel Capacity | 162,642 |
| Range (miles) | 6,700 |
| Passengers | 251 |
| Cruise Altitude (feet) | 39,000 |

# Residual Effects of Alcohol on Aircrew Performance

**Would *you* fly with a hangover?**

by Leon M. Wise, PH.D
Heidelberg College
Tiffin, Ohio

Many of the immediate effects of alcohol ingestion are well known and well documented. Hundreds of studies have been done over the years which point to specific negative effects on such things as reaction or response time, vestibular functioning, coordination, judgment, memory, decision-making, risk taking, and a host of others.

Numerous agencies have periodically undertaken studies to examine some of these factors in an aviation environment. The findings not only substantiate these obvious alcohol effects, but also have highlighted the increased significance of such effects on a highly complex, high risk task like flying a high performance vehicle in a hostile environment.

It is well known that drinking, then

driving a car is dangerous. Flying after drinking magnifies this danger potential. A comparison of automobile driving with flying may help to make this clear.

It is not uncommon to overhear an instructor pilot say to a prospective student, "Flying is as easy as driving a car." This is just not true! Controllable car motion doesn't have as many degrees of freedom as an airplane. The automobile driver controls left and right movement (yaw) only. A pilot, on the other hand, not only uses a control for yaw, but pitch and roll as well. In addition, a pilot frequently, if not usually, controls all three of these axes at the same time in an attempt at well-coordinated movement.

The speed of automobiles on the open road is presumed to be somewhere around the legal limit, 55 mph. Airplane pilots normally cruise at three figure airspeeds, so closing distances as a function of time happen much faster than in a car.

If the driver in a car drops a cigarette, loses his map, or spills a beverage, he can, if he chooses, pull over to the side of the road and retrieve the object or clean up the mess. If he is tired or a bit too relaxed because of the couple of drinks he had toasting the bride and groom at a wedding reception, he can pull over and rest. A solo pilot does not have that option. Once airborne, he must fly on until he reaches his destination. In sum, an airplane is more complicated than a car and flying is more demanding than driving.

A few years ago Dr. Leon M. Wise of Heidelburg College conducted an experiment to see what effects alcohol might have on the general responses involved in a simple flying task. He gave college students, who had earlier practiced in an instrument flight simulator, enough vodka and ginger ale to attain a .08% blood alcohol level. This was significantly below the legal limit established by many states for driving while intoxicated (.10%). Thirty minutes later he asked them to fly a very simple profile in the simulator. They were instructed to begin with the preflight checklist, continue through the run-up, taxi to the active runway, take off, climb to 5,000 feet and level off. They were to maintain this altitude until notified otherwise. Some of the behaviors exhibited during the study included: incorrect wing flap settings for takeoff and landing, accidental fuel dumping by selecting the incorrect switch, dropping the landing gear well in excess of placarded speeds, attempts to land by instruments at 10,000 feet above ground level (misreading the altimeter by 10,000 feet), forgetting checklist items or performing them out of sequence, and in one case, literally falling into the cockpit! And all of this while legally sober. That is, sober enough to legally drive a car!

Since most people who drink socially do so in the evening, he followed this study with a night-flight version. He found that his subjects committed not only the same types of mistakes, but were much more likely to act as though their visual apparatus was constricted to a kind of tunnel vision, with thinking to match. They were also unable to handle routine emergencies in an appropriate and timely fashion. He duplicated these studies with some variations and found that data to be in general agreement in both cases.

The old World War II image of the hotshot pilot included flying the hairy mission, making it safely to home base, and then retiring to the local bar to hoist a few and swap lies. It was part of the macho image of the day. That image has still not altogether disappeared. Many crewmembers do drink socially and on more than one occasion prior to takeoff, they have been observed taking a few whiffs of 100% oxygen to clear out the cobwebs. This suggests that although some time had elapsed since the last drink, they were suffering from what is commonly known as a hangover—a condition the researchers called residual or delayed alcohol effects.

Dr. Wise set out to determine what, if any, residual behavioral effects could be observed when alcohol ingestion was combined with a relatively simple flight related task—a preflight checklist situation. Specifically, he was interested in comparing a no-alcohol condition with a 14 hour post-ingestion condition. In this study, reported elsewhere, oversight errors were used as a measure of alcohol effects. For example, before each subject entered the simulator cockpit, the experimenter preset the following errors.

The landing gear handle was placed in the UP position. If a pilot takes off in this condition and in this particular simulated

aircraft, as soon as a significant amount of weight has been removed from the wheels, they retract automatically. Result? A good chance that the plane would settle back down on the runway and onto its belly.

The speed brake switch was placed in the DOWN, or extended, position. This meant that as soon as hydraulic pressure reached the proper level, the speed brakes would extend and remain extended. Takeoff would have been extremely difficult, if not impossible.

Wing flaps were set at the 50% position. This would create excess drag and cause some difficulty on takeoff.

The fuel selector switch was a three-pole, double-throw, center-off switch by which the pilot could select TIP TANKS, OFF, or MAIN TANKS. For the experiment, the fuel selector switch was placed on TIP TANKS. This meant that, after light-off, if the pilot tried to change the fuel switch by moving it one click (detent) in the proper direction, he would actually place it in the OFF position. Obviously, this would result in fuel starvation, probably on climbout.

The parking brakes were left off. If the pilot overlooked this, the aircraft would begin to move shortly after the throttle was placed in the idle position and the engine spooled-up. This action might easily bring about contact with other aircraft or support vehicles parked nearby, at the very least resulting in "ding-damage."

Finally, the altimeter was misset by 1,000 feet. If not caught prior to attempting an instrument landing, the pilot, without realizing it, would actually be trying to put the aircraft 1,000 feet below the surface of the runway!

The results were very enlightening. In spite of the fact that all traces of alcohol were probably gone from the blood 14 hours after drinking, the results indicated a definite detrimental effect on the preflight task.

It is obvious that these missed errors hold considerable danger for the unsuspecting pilot. However, in this study, if the subjects had carefully followed the checklist, they would have caught each and every one of them. This, unfortunately, was not the case. Fourteen hours after drinking, approximately 68% of all subjects missed at least one preset error as compared with 10% for the no-alcohol condition and 89% for the 30 minute post-alcohol condition. In fact, responses after 14 hours were more closely aligned to those experienced 30 minutes after drinking than they were like those under the no-alcohol condition. The subjects didn't anticipate errors, so they found none.

The results appear to speak for themselves. The residual effects of alcohol produced a significant number of oversight errors. How to explain this is another matter.

Dr. Wise's assumption was that all traces of alcohol were absent from the blood by the time the subjects were tested in the 14 hour post-ingestion condition. Therefore, it had to be something other than a *direct alcohol* effect. Alcohol produces significant changes in the body systems, as was pointed out earlier. These changes appear to remain long after the alcohol itself has been metabolized and may produce, in some as yet unknown way, alterations in behavior. Perhaps with time, the body readjusts, eventually returning to something resembling its normal state.

**Conclusion**

What conclusions may we legitimately draw from all of this? Obviously, we cannot discount the residual effects found in the study described above. Further, this suggests that the same phenomenon may be occurring in other related situations, e.g. military, air carrier, and general aviation flying. But because of the less obvious, more subtle nature of residual effects, it is not readily observable.

Unfortunately, at this point we really don't know what proportion of airplane crashes are caused partly or fully by this residual effect of alcohol, because of its latent nature.

On the positive side, however, the FAA has already begun a series of studies reevaluating the rule requiring eight hours between drinking and flying. (*Editor's Note*— MAC requires 10 hours between drinking alcohol and mission show time.) More studies are anticipated. Notwithstanding that effort, thorough studies, particularly in realistic settings, are strongly urged for air carriers and military fliers. It's essential that such an important factor as residual alcohol effects be intensively studied in a wide variety of man-machine situations and systems.

# Trim Trouble

**A breach in checklist discipline can be fatal!**

Detroit on January 11, 1983, was cold and overcast, but the visibility was still around 10 miles. A steady 10-knot wind blew out of the southwest, making it seem colder than the 38°F temperature. All in all, not a bad night to fly from Detroit to Los Angeles. United Airlines Flight 2885, a DC-8-54F freighter, had actually started out as a regularly scheduled cargo mission originating from Chicago's O'Hare International under the call sign United 2894. The enroute portion from Chicago to Cleveland had gone uneventfully, and the flight changed call signs to United 2885.

After the short flight from Cleveland to Detroit Metropolitan Wayne County airport, the DC-8 was loaded with 55,956 pounds of cargo (and 57,230 pounds of fuel) bound for the west coast. Included in the cargo was a shipment of radioactive Special Form Americium 241. But the plane, the crew and the cargo never reached Los Angeles that night. A little over a minute after advancing power for the takeoff, United 2885 crashed into a plowed field just to the right of Wayne County's runway 21R, a giant fireball lighting up the late night Detroit sky. Most of the wreckage was contained in five ground craters, indicating the impact of the DC-8's four engines and the nose.

**Investigation**

Evidence surfaced in the form of eyewitness testimony. Of 25 persons interviewed, 16 had actually seen or heard the airplane take off. Most of the witnesses felt the takeoff was normal through rotation, and that the DC-8 had rotated approximately one-half to two-thirds of the way down the runway, to a normal or fairly nose-high attitude. Most witnesses indicated United 2885 broke ground without dragging the tail skid, but climbed rapidly and at an abnormally steep angle. Then, according to most witnesses, as the airplane reached about 1,000 feet above the ground, it rolled to the right in a gradual right turn. The DC-8 continued to roll until it was in a wings vertical position (right wing down). Impact marks indicated that the airplane struck the ground about 70°-80° nose down with about 200° right roll. The largest piece of intact structure was a portion of the aft fuselage with the empennage attached. Investigators began with the question of "what caused the airplane to crash in this way?"

In discussing "what went wrong," the National Transportation Safety Board (NTSB) also looked at a number of factors that, after sifting through the wreckage, might have caused the DC-8 freighter to crash. Unfortunately, the flight data recorder malfunctioned sometime between taxi out and takeoff, and was of almost no use in uncovering the cause of the crash. Investigators had to rely on the cockpit voice recorder (CVR) and the remaining physical evidence of the crash to uncover the cause of the accident. Analysis of the CVR showed the first officer (copilot) and the second officer (engineer) had switched seats prior to takeoff. Thus, the second officer, who was unqualifed as a pilot or copilot in the DC-8, was actually sitting in the right seat, and the copilot, unqualified to run the engineer's panel, performed the engineer's duties.

What is surprising here is that the captain even allowed the second officer in the copilot's seat. The second officer, who made the takeoff, had failed to qualify as a DC-8 first officer, but this fact was probably unknown to the captain. Although the second officer had qualified as a first officer on United's Boeing 737s, he required special training and surveillance, and subsequently lost the qualification after a year on the line. In fact, the second officer on United 2885 was permanently removed from all pilot duties by mutual written agreement between himself and United.

But even an unqualified engineer should not have mishandled an aircraft in such a way to cause it to crash. The NTSB looked further at the freighter's configuration at the time of impact.

**Critical Element**

The most critical element of the accident sequence was the excessive noseup horizontal stabilizer position, which was discovered in the postcrash wreckage examination. Physical evidence clearly showed that the stabilizer trim was set at 7.5 units Aircraft Nose Up (ANU) at impact—an abnormally high setting. Yet, functional tests of the hydraulic and mechanical actuator components of the flight controls revealed absolutely no control abnormalities. Runaway trim was considered in several modes, but NTSB investigators concluded that runaway trim would have driven the stabilizer trim to a full 10 units, versus the 7.5 indicated. Next, the board had to discover how the trim got to 7.5 units.

The NTSB, in talking with other United DC-8 crewmembers including those who knew the crew, testified that the captain and first officer used trim to assist in making smooth landings. Simulator flight testing indicated that a final stabilizer trim setting of 7.5 units ANU was feasible. In fact, a line DC-8 pilot who made landings using this technique actually achieved a trim setting of 7.5 units in one of the simulator rides. However, the presence of landing trim before takeoff presupposes the following missed opportunities for correction:

- The prescribed first officer's standard operating procedure to retrim after landing to 2 units ANU;
- The second officer's walkaround and preliminary cockpit preparation (although not required on an enroute stop, such as at Detroit);
- The captain's cockpit preparations;
- The captain's/first officer's setting of trim after start;
- The captain's recheck of trim setting versus final weight on taxi out; and
- The first officer's check of trim on the before takeoff checklist.

The first officer's inconsistency in retrimming after landing, short duration of taxi after the landing, short duration of the turnaround, and the cold, dark night might have contributed to these oversights. But in light of the crew's other activities in the cockpit that night, including exchanging seats between the first and second officer, the lack of qualification of the second officer for the position he occupied on takeoff also could have contributed in overlooking this critical checklist item. The NTSB concluded, then, that the flight crew inadvertently overlooked setting the stabilizer trim at takeoff, and that the 7.5 units ANU trim setting used in the previous landing wasn't removed after landing or detected while preparing for takeoff. Was the uncorrected trim setting fatal to the crew?

To determine this, United crews performed eleven takeoffs in the DC-8 simulator. Ten of these were recorded. Three takeoffs were performed to familiarize the cockpit crew with the simulator characteristics, then five were made with stabilizer

trim settings of 7.5 and 10.0 ANU. Three takeoffs were then made coordinating CVR-derived timing, transmissions, and aural cockpit signals. The stick shaker activated on these last three takeoffs, and in some instances, the time of onset was identical to stick shaker onset derived from the CVR of United 2885. As the simulated airplane gained airspeed after liftoff, *it was impossible to hold the proper climbout attitude with full forward control wheel inputs.* The nose of the simulator DC-8 rose from 30° to 40° noseup, with accompanying stick shaker and simulated stalled condition.

In all, the NTSB came up with the following conclusions regarding United 2885:

1. The airplane was properly certificated, equipped and maintained.
2. There was no evidence of preaccident failure or malfunction of the aircraft or its systems.
3. The flight data recorder didn't function properly.
4. The horizontal stabilizer trim was set at 7.5 units ANU at impact.
5. No discrepancies were discovered in any flight control components which survived the crash.
6. The landing gear was down, and the flaps were set at 15°.
7. The first officer (copilot) and the second officer (flight engineer) swapped duty stations 65 seconds before takeoff.
8. The second officer, who attempted the night, visual takeoff, had failed to qualify as a DC-8 first officer.
9. The second officer was permanently removed from all pilot duties by mutual written agreement with the company.
10. The flight crew inadvertently overlooked setting the stabilizer trim for takeoff, and the setting of 7.5 units ANU was the previous landing trim setting.
11. Had any one of six distinct procedural requirements involving all three crewmembers been followed, the stabilizer landing trim should have been set within acceptable limits at takeoff.
12. After takeoff, the captain and the second officer were unable to arrest the pitchup and control the airplane.
13. The airplane climbed to about 1,000 feet above the ground, and the engines surged during the climb causing visible flames to emit from the engines.

In discussing the human performance aspects of the flight, and apart from the violation of both FAA and United regulations, the more significant aspect of the seat swapping is that neither crewmember was qualified for the position he occupied for the fatal takeoff. The cockpit conversation contained several reassurances, cautions, and reminders by crewmembers indicating possible tentativeness or uncertainty on the part of the first officer and the second officer. The most critical mismatch of duties versus the qualifications existed in the second officer occupying a pilot position, rather than the first officer acting as flight engineer.

In all, the second officer's demonstrated inability to cope with the many changing parameters of flight during a landing suggests that he would similarly be unable to deal with the situation he faced during the takeoff. He might not have been capable of assessing the seriousness of the rapidly deteriorating flight conditions on takeoff and might not have been capable of initiating corrective action for the unwanted, unexpected trim. The second officer was considered to be deficient in several skills which were absolutely required to make a safe night takeoff—rapid scan and division of attention.

**Probable Cause**

The NTSB determined that the probable cause of the accident was the flight crew's failure to follow procedural checklist requirements and to detect and correct a mistrimmed stabilizer before the airplane became uncontrollable. Contributing to the accident was the captain's allowing the second officer, who wasn't qualified to act as a pilot, to occupy the seat of the first officer and to conduct the takeoff.

**Applications to MAC**

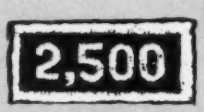
Checklist discipline and crewmember professionalism are hallmarks of MAC, as they should be, and just as they are for the airlines. But just one overlooked item on a checklist, be it in the cockpit or on a walk-around inspection, can be fatal. Coupled with complacency and just a "small" lack of integrity, you have a crew destined for disaster.

*Adapted from NTSB/AAR–83/07*

# Flying Hour Milestones

Lt Col Paul E. Winkler, 139 TAS
CMSgt Dwight R. Brown, 326 MAS
SMSgt Leslie Morgan, 326 MAS

Lt Col Donald Baker, 18 MAS
Lt Col Jon E. Hannan, 305 ARRS
Lt Col Thomas D. McGurk, 18 MAS
Lt Col Donald R. Ward, Det 2, 1400 MAS
Maj William B. Benton, 326 MAS
Maj Jeffrey M. Bricker, 326 MAS
Maj Bruce C. Dobbs, 707 MAS
Maj William E. Leatherbee, 326 MAS
Maj John J. Mahoney, 326 MAS
Maj Stephen V. Morrison, 326 MAS
Maj Robert A. Peck, 22 MAS
Maj Charles H. Reese, 76 MAS
Maj Errol L. Rekston, 21 MAS
Maj Bartlett H. Rolph, 326 MAS
Maj Charles O. Sanders, 326 MAS
Maj Matthew J. Schack, 326 MAS
Maj Charles P. Schafer, 326 MAS
Maj Paul Sebastian, 326 MAS
Maj George N. Talley, 326 MAS
Maj Warren J. Wetherbee, 326 MAS
Capt Thomas J. Appolloni, 1 HS
Capt Harry C. Chapman, 1 HS
SMSgt Paul A. Couture, 326 MAS
SMSgt Jerrold S. Eignor, 18 MAS
SMSgt Harold E. Wurtzel, 22 MAS
MSgt Donald G. Bergesen, 18 MAS
MSgt Ronald J. Charron, 18 MAS
MSgt Frank A. Cunningham, 76 MAS
MSgt Dennis M. Hauck, 326 MAS
MSgt Robert E. Mason, 76 MAS
MSgt Paul E. Miller, 18 MAS
MSgt Ted D. Monroe, 18 MAS
MSgt Salvatore R. Mosca, 143 TAS
MSgt Roy A. Parmley, 18 MAS
MSgt Raymond H. Rodke, 109 TAS
MSgt Frank H. Sellers, 76 MAS
MSgt Robert R. Tanner, 109 TAS
TSgt Raymond E. Armstrong, 1 HS
TSgt Ricardo A. DaSilva, 1 HS
TSgt Stanley R. Dorjahn, 75 MAS
TSgt James M. Postle, 21 TAS
TSgt Raymond D. Simmons, 41 MAS




Lt Col James E. McArdle, Jr., 41 ARRS/CC
Maj Gregory N. Schneider, 305 ARRS
Maj James C. Woolworth, 305 ARRS
Capt Richard V. McGirr, Det 1, 39 ARRW
Capt Thomas J. Oshansky, 4 MAS
SMSgt Paul N. LeClair, 305 ARRS

Ranks and units are those at time of award. See MACR 900-3 for details on how to apply for your own milestone award.

# C.R. TERROR

## The Pudgy Pilot Prangs a Piper

Let's go present position direct Sappra, Sammy m'lad," the Vice of VMC drawled, as he slowly gazed over the peaceful Sea of Japan.

"Done, Boss," the ever-ready right seater remarked. "We're already cleared."

"Er, ah, of course, Sam. We'll just, uh, that is, call Plato high and check terminal weather while I prepare my approach briefing." The Omnivorous Orator continued to stammer, surprised, as usual, by the efficiency of his crew.

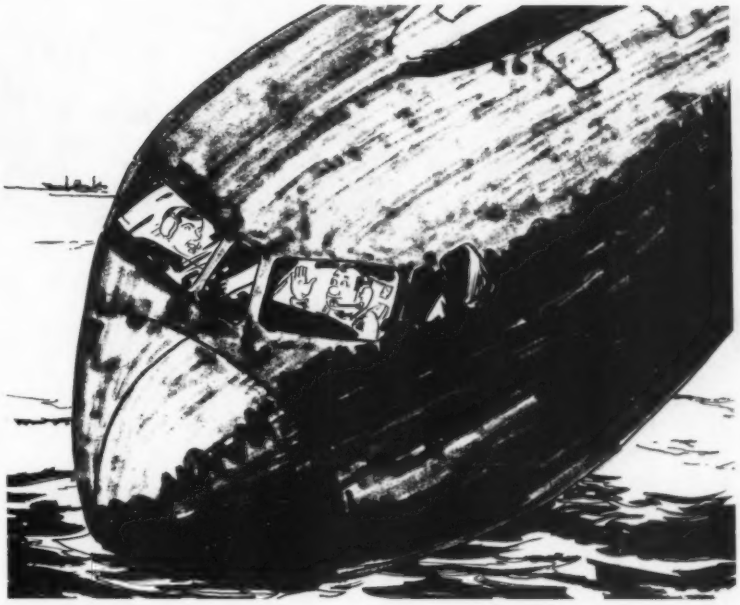
"MAC Heaviest 859, Plato high control. Say Carrot estimate and destination airport." The radios were oddly crisp and clear, save the everpresent guard check. Why, even C.R. understood the transmission.

"I'll take it now, Sammy," the Marvelous Major muttered. "Plato, this here's MAC's finest, and we're headed for beautiful Fun Gon Whey-by-the-sea. Be there in a couple of shakes," he drawled incomprehensibly. Long Sufferin' Sam grimaced and awaited the inevitable response.

"Say again MAC Heaviest, your transmission was totally unintelligible."

"Now see here...," began the Miffed Major, but Sam cut him off.

"Carrot at 0905Z and expecting Romeo Kilo X-ray Zulu at 0933."



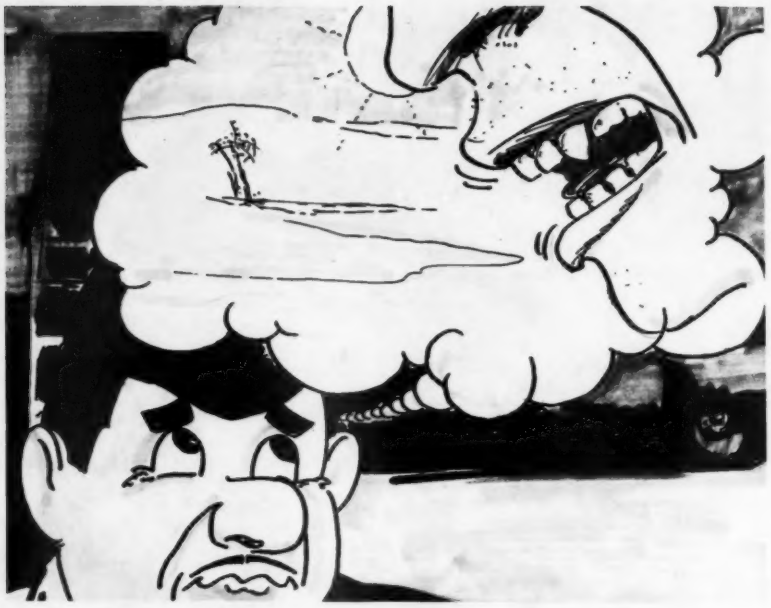
"Roger MAC, cleared to Peachy DME fix present position direct. Expect ILS Rwy 36. Weather, six octas 400 ft, eight octas 8000 ft. Wind 260 at one-two gusting two-zero. Altimeter two niner eight five."

"Dismal," Ty muttered from the jump seat.

"No sweat" quipped the Localizer Lothario, "You forget who's at the controls of this trusty bucket of bolts, Ty." Thumbing through the approach plate, C.R. eventually came to the correct page. "Ah, here it is, ILS Rwy 36, this'll be a snap. I'll just grease another one in here for grins."

Hearing C.R.'s threat, Sam, Max and Ty jerked into motion, cinching their seatbelts tighter in pavlovian preparation for another carrier landing demo by the Sultan of Sinkrate.

Amazingly, C.R. eased



the Starlifter gently to earth. The awestruck crew sat in silent disbelief. All except one, of course. "Another fantastic performance, if I do say so myself," C.R. chortled. "This calls for a local specialty, a Terrorific 'tini laced with 'grapie' oscar —that's like cold duck for those of you new to Korea!"

"It *was* an incredibly average landing," remarked Ty Downs, not wishing to feed an already unbelievably inflated ego. "However, we may even join you, for a change, provided we don't have to stay overnight in the Lockheed Hilton."

"Nothing to concern yourselves about," the Lackadaisical Leader lamented, "This is the Far East, and when nothing's available on-base, there's always room at the Nusoule Hotel. You know the place— you can rock all night with the live band on the fourth floor." C.R. was becoming more covetous of his sleep in his old age.

Dawn comes early in the land of the morning calm, as C.R. discovered while brushing his teeth with 'diet wrong' cola on the bread van, which was cleverly disguised as a crew bus. "Reminds me of the good ol' days when every establishment had those same signs on the wall espousing 'non-portable' water. Faced with these tragic austerities, one often resorts to combat techniques," commented the King of Camouflage, still slightly nauseated by the taste of Quest toothpaste mixed with cola.

"You may drop us at the command and control cubby hole my good man. We have direction to receive," C.R. informed the driver, remembering fondly the gentle words of advice offered by Colonel Fang: "Terror, you even breathe without getting permission on this trip, and you'll be flying sand to the Sahara for the rest of your life!" The thought of endless sand dunes and 120° heat transformed the usually confident cretin into a sweating, drooling, basket case.

"Boss, we're here," Max managed, realizing how tenuous the situation could become when C.R. suffered a 'Fang attack.'

But the Ace of Anxiety quickly recovered and was soon at the command post window, peering through the bars. Having ignored the forms 369, checked earlier by the rest of the crew, C.R. alone was surprised at the duty officer's mention of an engine run for number-two.

"Criminently, why do we need an engine run? That'll eat up too much time, and we certainly can't afford a late takeoff way out here," the Epitome of Efficiency whined. "I can't spoil my unbroken string of two consecutive on-time takeoffs."

"*Three* in a row, Boss." chipped in Max, eager to keep things positive. "But the run won't be any problem. It's just to make sure the bleed air problem won't

repeat itself."

Later, flight preparations completed, the crew tracked down their fearless leader, propped precipitously on a stool in the snack bar, of course, and then proceeded to the aircraft.

Surprisingly, the checklists were moving along without a hitch, and it began to appear that MAC's most famous crew would continue their longest unbroken string of timely departures.

"Starting engines check complete, engineer," Max stated, winding the checklist again.

"Before taxi, Boss?" Sammy prodded.

"Yes, er, ah, of course, keep those checklists rolling right along there, we've not a moment to lose!" C.R. really *was* nervous about making this takeoff on time. Engine runs never pleased him, especially when it could mean another night of "I Wanna Go Stateside" accompanied by the electric viola and laser drums.

"Before taxi complete, Boss, but I think we may have a problem," Sammy's concern was genuine, as he spied a small aircraft off to the right of the camouflaged cargo carrier. "We have to be very careful on the taxi out. If we use any extra power, we're gonna blow that puddle jumper over!"

"No problem, Sammy, those little beasts can really fool you. They're actually very stable ya know," simpered the Silver-tongued Fox. "Besides, we've got to get over to the hammerhead and run this engine so's we can take off within our window. Now clear me right and we're off."

"Boss, easy on the power!" Sam pleaded. "Our jet blast is going to annihilate that little airplane!"

But the Tunnel-visioned Titan never heard the caution. Concentrating only on getting the aircraft over to the hammerhead, he shoved up the throttles three-fourths the way to the stops, blowing dust and debris everywhere.

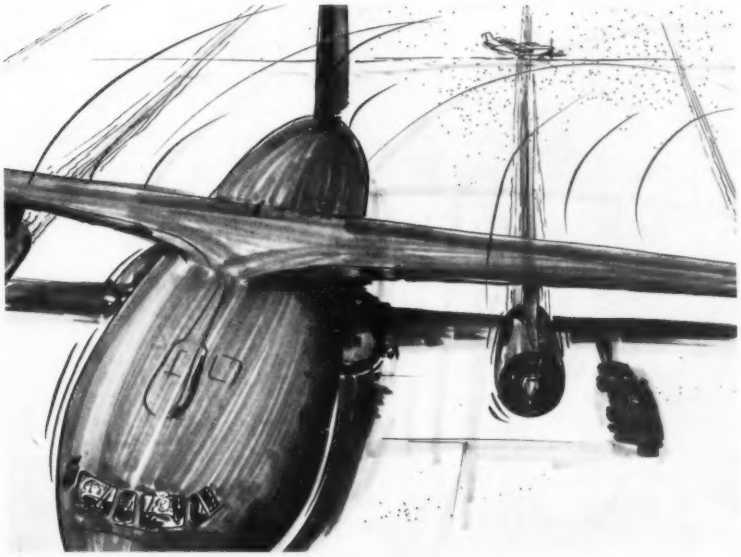
The crunching sound was barely audible in the cockpit of the streaking Starlifter as it rocketed into a left turn.

"MAC Heaviest 859, tower. Taxi clearance rescinded. Hold your position while we verify reports of dual aircraft movement in your area. Seems a Piper has begun to taxi without clearance."

"You see, Sammy m'boy, some people just don't use common sense." The Confident Commander commented, "Never even considered other aircraft. Probably in a real rush of some sort, got behind the power curve, ya know. Happens every day..."

"Um, Boss?" The Ready Right-seater began, "The only aircraft anywhere near us appears to be the unmanned Piper I warned you about, and it's lying on its side..."

The siren of the base commander's staff car, now rapidly approaching, stirred the Mental Midget's first conscious thought of the day. "Now I suppose they'll try to call this a crew delay," C.R. moaned as he contemplated another crew-restless night.



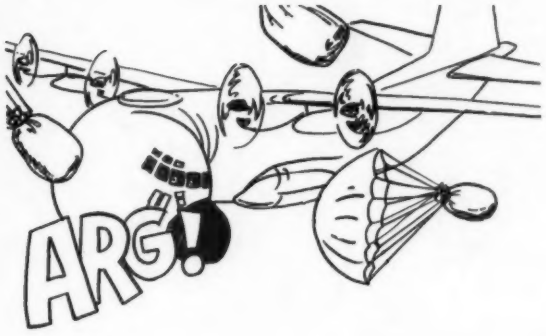
## Heads-up Thinking

Occasionally, being in crew rest can be almost as exciting as flying. Take the case of one crew billeted just a short distance from this well-known C-141 base. Glancing into the sky to watch one of the Starlizards do its thing on departure, they noticed a definite trail of flames or sparks coming from the left underbelly region. The AC of the ground-bound crew immediately rushed to a phone, called the command post, and told them of the flaming 'Lizard. The duty controller radioed the aircrew, informed them of what was seen from the ground, and the airborne AC sent a scanner back to inspect the wheel wells. Sure enough, he observed smoke, smoldering tires, and sparks! The C-141 crew executed a smart "about face," and summarily returned to the departure base. After a fairly uneventful landing, the crew and pax egressed the smoldering '141, and left it in the capable hands of the fire fighters and the maintainers. Log one "atta persons" for the heads-up crew! By the way, the maintainers found that a dragging brake was the culprit and cause of the fire, but they could never determine why the brake was dragging.

## Overheated Herk

USAF C-130 crews are always alert to the possibility of a nacelle overheat, but luckily, they very seldom happen. Except to one crew flying in the wilds of Florida. After an uneventful, though heavyweight (144,000 pounds), takeoff, the nacelle overheat light illuminated. Following Dash-One procedures, the crew raised the gear and shut down the affected engine. After a real-life actual three-engine landing, the crew turned the Herk over to maintenance for a closer look-see.

Preliminary investigation revealed a 14th-stage bleed-air manifold assembly had ruptured allowing bleed air into the nacelle area. Further, the internal butterfly valve was separated into two pieces along a fault line initiated at the weld seam. Maintenance could never determine the cause of the failure which directed the major force of the bleed air into the sidewall duct. That duct, in turn, failed because it wasn't designed for that much stress.




## Bungled Bundle

The mission was scheduled to be a night, two-ship SATB (standard airdrop training bundle, i.e., 15-pound sandbags) bundle drop. From the beginning, the formation was scheduled to drop a TBC, TBP, and TBH (Training Bundles simulating CDS, Personnel and Heavy Equipment) in that order. All briefing items were covered thoroughly, except the drop altitude. The lead nav misunderstood what the chief nav was saying, and used a drop altitude 100 feet higher than the other aircraft for his CARP computations. After slowdown, the lead aircraft stabilized at the correct altitude, but then climbed to the "other" altitude when the copilot corrected the pilot. The AC in number-two felt that the lead Herk had only momentarily deviated, and would descend back to drop altitude prior to the drop. At "green light," lead was at 1,040 feet, while his wingman was at 980 feet, the proper drop altitude being 975 feet. Lead's bundle impacted number-two due to a combination of "...human error, aircraft position, wind direction, possible prop wash, and the ballistics of the SATB...." Total damage to the number-two C-130 was approximately $2,630, due to a dented left forward wheel fairing (panel 467), and a two-inch diameter hole on top of the left horizontal stabilizer near the trailing edge, five feet from the leading edge. Good thing lead wasn't dropping an actual heavy equipment load! Ouch!

## Cool King Air

Cruising calmly along at FL 260, the pilot of the C-12F noticed the autopilot trim disconnect light illuminate.

"No problem! Disconnect George, turn off the electric trim, and give it back to him," the AC thought.

The aircraft, however, was unimpressed with this corrective action, and the trim disconnect light illuminated again. This time when the aircraft commander disconnected the autopilot, he noticed the manual trim control wheel wouldn't move. He declared an emergency, performed a controllability check, and made an uneventful 40% flap landing.

Specialists later determined that accumulated condensation within the gearbox had frozen and failed both trim systems.

## Quick Stoppers

# Hail-10,000...CT-39-Zero

The field was literally surrounded by thunderstorms as a CT-39 prepared for departure. This gloomy picture was solidly reinforced by the ground-based weather radar, which also confirmed no thunderstorms in the immediate area. Forty-five minutes elapsed between the weather briefing and takeoff due to refueling, passenger loading, and taxi. Immediately after takeoff, and approximately 10NM from the field, however, the Sabreliner approached what appeared to be an area of heavy precipitation. The crew requested a left turn to avoid the area, but traffic congestion and the associated radio traffic prevented an ATC response. The aircraft commander elected to continue on the assigned heading rather than declare an emergency and take evasive action, since the precipitation didn't *appear* that dangerous. The crew repeated their request and this time ATC granted them a left turn and higher altitude. While turning, the aircraft entered the leading edge of the storm at 240 KIAS and 10,000 feet MSL. The crew immediately discovered the storm was more intense than they first thought. Flight inside the precipitation lasted only 45 to 60 seconds, but post flight inspection showed extensive damage: a two inch by one-half inch hole in the right wingtip leading edge; a badly mangled number two engine nose cone; dents, loose rivets, and numerous small holes and cracks to the engine ring cowling; deformation of both horizontal stabilizer tips; and numerous dents on the forward edge of the horizontal stabilizer.

The reason for the excursion through the thunderstorm? Well, it seems a line of intense thunderstorms developed **after** the crew received their weather briefing. This set the stage for the crew's inadvertent penetration of a developing thunderstorm, which resulted in $10,449 damage!

# After Deadlines

**CHANGE ONE**—In the January issue of *TMF*, we published an article entitled "Cleared for the Approach." On page 8 of the article, the author indicated "...passing GINIE you may descend to 1,900 feet and complete the approach as published." That just isn't so, as so many of you sharp-eyed *TMF* readers let us know via autovon *and* commercial telephone lines. Of course, you all were completely correct. The most important part of that statement we omitted was "...as published only when cleared to that lower altitude by ATC." While the note in the profile says that, we talked to Mr. Dick Rosebrook at the Atlanta Flight Inspection Field Office, the man who designed the approach, to be sure. He confirmed—*don't* descend unless specifically cleared by ATC for that lower altitude.

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**UNITED TO TRAIN C-5 CREWS**—The Aeronautical Systems Division at Wright Patterson AFB awarded United Airlines Aircrew Training Inc. a 97 million dollar contract to train C-5 crews. What sets this contract apart from others is that this 15-year firm, fixed price contract includes the simulator and the training for all C-5 pilots, flight engineers, loadmasters and engine-run maintenance technicians. In addition, United will supply all instructors, books, manuals, and any other items needed for C-5A and B training. Air Force instructors will provide flight training. The contract even includes a guarantee clause. Should any student fail a flight check given by an Air Force examiner, United Airlines must retrain the student at *its* expense. Air Force Systems Command granted a waiver to the normal five year contract length to allow for a 15-year term , which includes five years for Air Training System production and 10 one-year options through 1999. The simulators will meet the same standards used by all major airline training programs, and will have six-degree freedom of motion and computer-generated imagery for dusk and night visual simulation. Delivery and initial training is to coincide with the first C-5B aircraft deliveries late next year.

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**4TH MAS CELEBRATES ITS 50TH ANNIVERSARY**—The 4th MAS is the oldest airlift squadron still activated. July 8, 1935, at Rockwell Air Depot marks the historic activation of the squadron. The 4th is currently assigned to the 62d Military Airlift Wing, McChord AFB and its crews fly C-141B Starlifters. Its 50 year history spans 10 aircraft and numerous decorations and citations. The 4th MAS flew airborne assault missions on Sicily, Myitkyina, Burma and in southern France, in support of partisans in northern Italy and the Balkans during World War II. In support of the Korean War, the 4th provided aerial transport from the United States to Japan, and subsequently between Japan and Korea. The squadron also flew missions in the southeast Asia conflict and participated in Operation Home Coming, the release of American Prisoners of war from Vietnam. A crew from the 4th was also the first to land a C-141 on Grenada during the U.S. military operation in October 1983.

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# THE MAC Flyer

Do you have latent supervisory tendencies? Ever get the urge to tell a story with a mishap prevention punch line? Be embarrassed no more!! These same personality quirks can now actually be considered strengths. That's right! If you are ambitious and can tell a good story, are a relatively new or underutilized major with MAC strategic airlift experience, you are what MAC's flight safety journal needs. We'll have an opening in the May-June 1985 time frame for a supervising editor. Flight safety and/or public affairs experience is a plus. Also helpful is the ability to control and direct the energy of two junior editors. Interested officers should contact Major Jim Lee, Supervising Editor, Autovon 638-5542, or write HQ MAC/IGFE, Scott AFB, Il. 62225-5101.